



H1 Cirrus  
in the form of filaments,  
strands, or hooks

H2 Cirrus  
dense, in patches or sheaves,  
not increasing, or w/ tufts

H3 Cirrus  
often anvil shaped remains  
of a cumulonimbus

H4 Cirrus  
in hooks or filaments,  
increasing, becoming denser

H5 Cirrostratus  
or cirrus bands, increasing,  
veil below 45 degree elevation

H6 Cirrostratus  
or cirrus bands, increasing,  
veil above 45 degree elevation\*

H7 Cirrostratus  
translucent, completely  
covering the sky

H8 Cirrostratus  
not increasing, not covering  
the whole sky

H9 Cirrocumulus  
alone or with some cirrus  
or cirrostratus



M1 Altostratus  
mostly semi-transparent, sun  
or moon may be dimly visible

M2 Altostratus or  
Nimbostratus dense enough  
to hide the sun or moon

M3 Altocumulus  
semi-transparent, one level,  
cloud elements change slowly

M4 Altocumulus  
lens-shaped, or continuously  
changing shape and size

M5 Altocumulus  
one or more bands or layers,  
expanding, thickening

M6 Altocumulus  
from the spreading of  
cumulus or cumulonimbus

M7 Altocumulus  
one or more opaque layers,  
w/altostratus or nimbostratus

M8 Altocumulus  
with cumulus-like tufts  
or turrets

M9 Altocumulus  
chaotic sky, usually at several  
layers, maybe w/ dense cirrus



L1 Cumulus  
with little vertical extent

L2 Cumulus  
with moderate or greater  
vertical extent\*

L3 Cumulonimbus  
tops not fibrous, outline not  
completely sharp, no anvil

L4 Stratocumulus  
from the spreading and  
flattening of cumulus

L5 Stratocumulus  
not from the spreading or  
flattening of cumulus

L6 Stratus  
in a continuous layer and/or  
ragged shreds

L7 Stratus fractus  
and/or Cumulus fractus  
of bad weather

L8 Cumulus &  
Stratocumulus, not spreading  
cumulus, bases different levels

L9 Cumulonimbus  
with fibrous top,  
often with anvil

| Base Height | Polar Regions        | Temperate Regions    | Tropical Regions     |
|-------------|----------------------|----------------------|----------------------|
| High        | 10,000 to 25,000 ft. | 16,000 to 45,000 ft. | 20,000 to 60,000 ft. |
| Middle      | 6,500 to 13,000 ft.  | 6,500 to 23,000 ft.  | 6,500 to 25,000 ft.  |
| Low         | Up to 6,500 ft.      | Up to 6,500 ft.      | Up to 6,500 ft.      |



**Mammatus**  
drooping underside of heavy,  
rain-saturated clouds



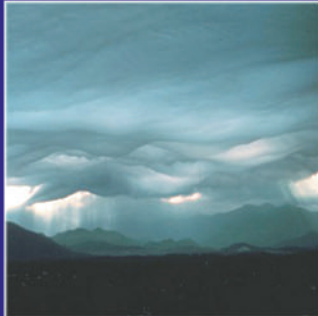
**Tornado**  
formed by rotation of up and  
down drafts within thunderstorm



**Wall Cloud**  
hanging from cumulus,  
possible tornado formation



**Shelf Cloud**  
leading edge of fast moving  
frontal system



**Wave Cloud**  
formed by strong horizontal  
winds over uneven terrain

| Height | Major Cloud Types   |
|--------|---|
| High   | Cirrus (CI), Cirrostratus (CS)<br>Cirrocumulus (CC)                 |
| Middle | Altostratus (AS), Altocumulus (AC)<br>Nimbostratus (NS)             |
| Low    | Stratus (ST), Stratocumulus (SC)<br>Cumulus (CU), Cumulonimbus (CB) |

NATIONAL WEATHER SERVICE WEB SITES:  
NWS Headquarters - [weather.gov](http://weather.gov)  
Alaska Region - [www.arh.noaa.gov](http://www.arh.noaa.gov)  
Central Region - [www.chr.noaa.gov](http://www.chr.noaa.gov)

**NOAA'S NATIONAL WEATHER SERVICE**  
*Serving the Nation Since 1870*

Eastern Region - [www.erh.noaa.gov](http://www.erh.noaa.gov)  
Pacific Region - [www.prh.noaa.gov](http://www.prh.noaa.gov)  
Southern Region - [www.srh.noaa.gov](http://www.srh.noaa.gov)  
Western Region - [www.wrh.noaa.gov](http://www.wrh.noaa.gov)

\*Photos Copyright 2002 Richard Coberly All others NOAA Photo Library